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INFORMATION REPORT

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The following chemical plants are under supervision of the Department for Heavy Chemistry in the Czechoslovak Ministry for the Chemical Industry:

STRUGEN 1. TOVARNA NA STRUMM HNOJIVA (Factory for the manufacture of chemical fertilizers) in Lovosice me. Litomerice, Bohemia. Construction of this factory began in July 1951; it is estimated that it will be put into operation, by the spring of 1954. The ammonia needed for the production of HNO3 (66 percent concentration) is to be transported from Stalinove Zavody in the Most, Bohemia. The daily production will be 150,000 liters of 66 percent concentration HNO3 for the manufacture of fertilizer. The manufacture of 99 percent concentration HNO, for production of explosives is not possible because of equipment used. Planning of the factory was done in Prague II, Hopfensteckeva Street. In charge of planning were Dohnalek (fnu), Doctor of Chemistry, Cap (fnu), engineer, and Chvojka (fnu), engineer, The production method was planned by Vesely (fnu), engineer, who is an expert on the manufacture of HNO3. The plant is similar to a factory located in Keeping in Sweden. Brack leastion of the factory in Lavorice and other details are not known!

STALINOVY ZAVODY aka STAZY, located in Zaluzi nr lost, Bohemia. It manufactures gasoline, oil, oxygen, and ammenia. In May 1952 a project was undertaken in Stazy to improve the coal feed to furnaces producing the gases needed to produce gasoline and its by-products. This was done by using conveyors, which now feed the furnaces. The Stazy factory originally had 72 furnaces, but during World War II most of them were damaged. Twenty-four of these furnaces are now in operation; twenty-four more have been reconstructed since summer of 1952, and the remaining 24 furnaces are demolished. The target date for finishing the reconstruction is not known. The Stazy factory covers an area $2\frac{1}{2}$ by $3\frac{1}{2}$ kilometers. It is fenced in by a cyclone wire fence, 2.5 meters high, affixed to concrete posts; one strand of barbed wire surmounts the fence. No production building is closer than 30 meters to the fence. The number of entry gates is net known. The main entry gate located on the southwest side of the factory is

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guarded by six guards. Only two guard towers, located on the secuthwest side of the plant, were observed. No perimeter guards were used prior to November 1952. Entry permits were obtained by the security officer, Kocourek (fnu), of the Chemo-projekt Department in Prague, who requested the Ministry for Chemical Industry to issue permits and also obtained permission from the security officer in the Stazy factory. Upon obtaining this permission, the visitor received a small $(2\frac{1}{2})$ by 4 inch) printed cardboard pass with his picture, giving his name and the location within the factory to which the visitor had access. The buildings are of structural steel and brick. The factory is supplied by power developed in the factory. The power plant produces 470,000 kw; sit is larger than the power plant in Ervenice, Bohemia, which produces 60,000 kw. The power plant is steam-operated. using a coal dust in its furnaces; the coal dust is made in the factory. The power plant is to be expanded to deliver more power since the production of gasoline is being expanded (reconstruction of furnaces). The main product at Stazy is gasoline, then oil; other products are ammonia, (10,000 liters per day), oxygen, and gas for heating purposes. Production figures are not known, but the production of gasoline at Stazy is reportedly such that it can supply the needs of all Czechoslovakia. The gasoline produced in Stazy is #stored in eight steel tanks varying in size from 6 to 15 meters in diameter and 6 meters high above the ground (it is not known how deep the tanks are set in the ground). Gasoline is pumped from here into railroad tank cars, and gasoline tank trucks, and also the ground storage tanks in Kralupy country the gasoline is partly ber the storage tanks in Kralupy ber the storage tanks in Kralupy ber the storage tanks in Kralupy nad Vltavou is known. Prior to November 1952, the factory operated on three shifts: 6 a.m. to 2 p.m., 2 p.m. to 10 p.m., and 10 p.m. to 6 a.m. The following is the production method used for the manufacture of gasolime in Stazy: the raw material for production of gasoline is s soft (brown) coal, which, after being granulated to a size of three to five millimeters, fed by conveyors into furnaces, where the developed gases are supplied with steam, and gas distillation and "condensation" of coal takes place. The gases are then pumped through filters, coolers and washing towers. The first light substances are taken at the coolers and are used for production of gasoline. $\frac{1}{2}$ Oil is used for washing the fraction, and the oil absorbs the medium and heavy substances. The remaining gases are then used for heating purposes. The oil used in the washers is distilled to obtain lightoil. The light oil is then further distilled to obtain fight off. The light off is then further distilled to obtain the remains are hear from which gasoline is also being obtained by separation, by using proper temperature (200 degree Celsius), pressure for particular square eentimeter and catalytic agents. The necessar, for the manufacture of gasoline are produced in Stazy for the not know exactly what they were.

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CHEMICKA TOVARNA (Chemical factory), also called CHEMICKA, in Usti nad Labem, Bohemia. This factory consists of a number of small factories and manufactures chemical colorings, small amounts of acids, and fertilizers.

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GASOLINE STORAGE PLANT in Kralupy nad Vltavou, Bohemia, is used to store gasoline piped from Stalinovy Zavody.

SYNTHESTA-SEMTIN, located 5 kilometers northwest to bice in Semtin, Bohemia. This factory consists to be the plant (on the south side) produces HNO3, H2SO4, 12, NH2 and fertilizers. The 99 percent concentration HNO3 produces is factory is then piped into the other factory, located to the north and separated from its sister plant by cyclone fence. The north plant produces explosives. The Synthesia-Semtin factory began operations in 1920, and its main product has always been explosives. The factory has been enlarged over the years, and production has been increased. Prior to November 1952, "Project D" was undertaken (also known as Problem 42000). Its purpose was to increase the production of HNO3 needed

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for the manufacture of explosives. In order to increase the production of HNO3, it was necessary to increase the production of ammonia, since ammonia is needed for manufacture of HNO3. This was accomplished by enlarging the building and equipment for the manufacture of ammonia. Planning for the increased production of ammonia was finished in May 1953, and the reconstruction of the ammonia plant is now in progress. At present, the daily production of ammonia amounts to 18,000 liters. Upon completion of the reconstruction in June 1954, the plant will be producing 30,000 liters of ammonia per day.

Since the increase in production of $\mathtt{HNO}_{\mathfrak{Z}}$ could not be accomplished by enlarging buildings within the factory, a new plant had to be designed and constructed near the old factory. The plans for this new plant were finished by Chemoprojekt in June 1953 and were submitted for approval to the Ministry for the Chemical Industry in Prague. In August 1953 the foundations of the buildings for the new plant to produce HNO, were laid. This new plant is to consist of six buildings which are to be a combination of reinforced concrete and brick construction. The estimated size of the buildings is 20 meters x 40 meters x 15 meters high. The area for the new plant will be about 300 by 400 meters. Administratively the plant will be under the Synthesia-Semtin factory. The new plant (known as Project "D") is to be completed in 1954, and the daily production is to amount to 40,000 liters of 99 percent concentration HNOz and 66 percent concentration HNOz for the production of fertilizer.

The Synthesia-Semtin factory is run by electricity generated in the power plant located in the northwest corner of the factory. It has coal-operated boilers, feeding steam to the adjacent building, where turbines and generators are located, producing 20,000 kw. Since the production of NH₃ (ammonia) and HNO₃ is being increased, more power is required, and therefore a new power plant is under construction on the south side of Synthesia-Semtin next to Project "D". Construction work on the new power plant began in 1948 and is almost finished. The new power plant is to use powdered coal for its boilers, and the generators are to produce an additional 40,000 kw. Buildings for this new power plant are of brick; the area covered by the new power plant is 150 by 300 meters. The Synthesia-Semtin factory is supplied by 220 V AC for lighting purposes and 360 to 480 volts AC for the electrical equipment. The necessary equipment for increased production of ammonia and HNO3 is to be supplied by Zavody Vitezneho Unora Hradac Kralove (Zvuhk) (Factory of the Victorious February) (formerly Skoda factory) in Hradec Kralove, Bohemia. The security office in Synthesia-Semtin is located in the administrative building outside the factory by the main gate. Senting yis to be given a written statement saying that any disclosure in unauthorized people of what the visitor may see will be construed a training and sayingges. It also instructs the visitor to proceed directly to him destination. visitor to proceed directly to him destination. After signing the above statement, the visitor receives a white slass, triangular ($1\frac{1}{2}$ by $1\frac{1}{2}$ by 1/8 of an inch thick), with two small holes in the center (vertical plane) through which a small button is sewed to the bakk of the badge. This button is then put through the buttonhole in the visitor s lapel. Upon receiving this badge, the visitor has to turn in his OP (Obcansky Prukaz) and he may proceed into the factory. The glass badge is returned to the security officer every night and the visitor is given back his OP. A Round, white glass badges $(1\frac{1}{2} \text{ inch})$ in Diameter) and square white badges $1\frac{1}{2}$ by $1\frac{1}{2}$ inches are also in use, but their meaning is unknown. The Synthesia-Semtin factory has only two entry gates, both located on the south side of the factory. The plant is surrounded by a cyclone fence 2.30 meters high with one strand of barbed wire on the top of the fence. During the day, the perimeter of the factory, outside the fence, is guarded by four soldiers wearing violet epaulets. This is a foot patrol; its tour of duty is hours. At the guard house, which is located outside the factor by the main gate, are twelve other guards for relief purposes. soldiers are brought to the plant every day from a garrison in Pardubice.

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. The following is the production method used to manufacture HNH3 (ammonia) in Synthesia-Semtin:

The factory uses the so-called "medium pressure" type system, in which the synthmicization of ammonia is accomplished by pressure of 260 atmospheres (1 atmosphere equals 1 kilogram per square centimeter). The synthmicization gases are produced in a tower-type furnace which burns high quality coke. Gases thus produced are fed through filters to remove the dust and are then fed to the converter; here the gases are supplied with steam to enrich the gases with hydrogen (H). These gases are then fed into water the converter where the CO2 is absorbed by the water. This washing is complished under 30 kilograms per square centimeter pressure. From the sample towers, the gas is purped through eight stages of compression that I the gas is under 260 kilograms per square centimeter pressure. Between the compression stages the gases are washed with a copper sulphate solution to absorb the remaining CO and CO2. After the weighth stage, the gas consists of pure N and H. This is pumped into a converter, where under pressure of 260 kilograms per square centimeter and a temperature of 350 degree Celsius the gas is changed with the aid of catalytic agents into a pure, gaseous NHz (ammonia). This pure ammonia is then fed through coolers, cooled to minus 30 degree Celsius, liquidized and kept under 260 kilograms per square centimeter pressure and normal temperature. The pure ammonia

for manufacture of HNO3;

is then used for production of HNO3 in Synthesia-Semtin.

The liquid ammonia is piped to heaters, evaporated, mixed with air and then fed through filters into tanks known as La Monte, which contain fine-mesh platinum-rhodium screen. Under 300 millimeter water pressure and a temperature of 900 to 1200 degrees Celsius, the ammonia gases mixed with air are burned, producing the nitrate cas. The temperature thus degeloped is then used to produce steam needed for the process. After this stage, the first weak solution is obtained. The rest of the gases are fed into a heating unit and then to a rapid cooler. In this stage a 50 percent concentration of HNO3 is obtained. The larger part of the HNO2 as produced in so-called absorption, consisting of eight towers, 2.5 meters in diameter and 15 meters high, where the gas is fed against the stream of water and 66 percent concentration HNO2 is obtained. The 99 percent concentration is produced in so-called "HOKO" chambers, where 66 percent concentration of HNO, , under 100 kilograms per square centimeter pressure and a temperature of 300 degrees Celsius. is mixed with oxygen and nitrate gases pumped here from preceding stages. Oxidation takes place and the 99 percent concentration is produced. It is this concentration which is used in the production of explosives in Synthesia-Semtin. It is the production of explosives in Synthesia Sy contains 0.5 kilograms of platin tom, and the total weight of the screen is estimated to be about 1.5 kilograms.

The other Synthesia-Semtin factory is located to the north. The only gate through which the north plant can be entered from the south plant is located in the northeast section of the fence separating the two sections. The northeplant produces explosives; one of the production materials used for production of the explosives is the HNO₃ produced in the southern part of the Synthesia-Semtin, which is believed to be pumped to the northern section. The section of the factory which produces the explosives is believed to be two to three square kilos meters large.

In MORAVSKA OSTEVATE is a factory producing 99 percent in Messars concentration and producing and fartilizers. The gases recessary for the manufactor of ammonia are obtained from the coke plants in Moravska Ostrava, and the synthesis is accomplished under pressure

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of 1,000 kilograms per square centimeter; It is this pressure which causes operational difficulties, causing production breakdowns because of the wear and tear on parts. The production of HNO₃ is estimated to be 20,000 listers of 99 percent concentration per day. Because of the crowded conditions in Moravska Ostrava, expansion of the factory is not believed possible though there is plenty of raw material available.

- 7. Refineries of crude oil in Bratislava, Slovakia refine only crude oil from Czechoslovakian oil wells. Deliveries to and from refineries are accomplished by rail and by water. Large storage tanks for crude oil and for manufactured materials, such as gasoline and oils, are located within the refineries.
- Oil refineries in Pardubice, Bohemia, were partially damaged by air raids during World War II, but it is estimated that the refineries are 90 percent reconstructed. Deliveries to and from them are made by rail; large storage tanks for crude oil, gasoline and refined oil are located in ride the refineries. These refineries are known as Fanto.
- 9. In Novaky, Slovakia, a new factory is producing materials needed for production of plastics, mainly "vinidur" and "viniplast"; the factory also produces glue for the plastics. The "vinidur" is acid and stain-resistant and is also used in smaller quantities in the machine industry.
- 10. The factory in Likier, Slovakia, manufactures "fermalin" from methylalcohol and formaldehyde. The production is shipped to other unknown factories for manufacture of organic dyes. The factory was put into production in the summer of 1952 and is thinged to be of importance since the planning of it was expedited.
- In Sokol Mariove Vary, Bohemia, there is a factory manufacturing carbide. Small mechanical improvements were planned by Shemoprojekt in May 1955. The factory is believed to have three or four electric furnaces burning calcium and its combination with "uhlikem".(

 Delivery of raw material and finished product is by rail.
- L2. In Nestemic in Bohemia there is a factory for the manufacture of soda from . The estimated area covered by the factory is 500 bby 700 meters. NaCl comes from East Germany and is delivered by Elbe river boats and by rail.
- Nelshozever alupy in Bohemia. Chemoprojekt was to finish the planning by the r 1953 and construction was to begin by the end of 1953. Oxygen is to be manufactured in two "Linde" units (by cooling and liquidization of air). The oxygen is to be stored in steel tanks eight meters in diameter and twelve meters high, from wheree the oxygen is to be pumped to a compressor station where it will be compressed and put into oxygen bottles under pressure of 160 kilograms per square centimeter. Production is to amount to 20 cubic meters per minute, and the oxygen is to be so clean that it can be used in the medical field.
- Also in Nelthozeves is a production is to amount to 20 cubic meters per minute.
- 160 Since November 1952, a new oxygen plant has been in the planning stage at Chemoprojekt in Prague, Husinecka Ulice. This plant is to operate on a small scale and is to be located in <u>BRNO</u>, <u>Moravia</u>.

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kilometers in area. The factory manufactures plexiglass, insulation materials such as "umakart", bakelite, "pertinex", and glue for plastics for military and citation. Some of the raw material needed for production to delivered from Synthesia-Semtin; these deliveries consist of acids and alkalis. Administratively, the Uma factory is independent of Synthesia-Semtin. The Uma factory is guarded by industrial police and soldiers.

- The chemical factory in Rybitvi, seven kilometers southwest of Pardubice.

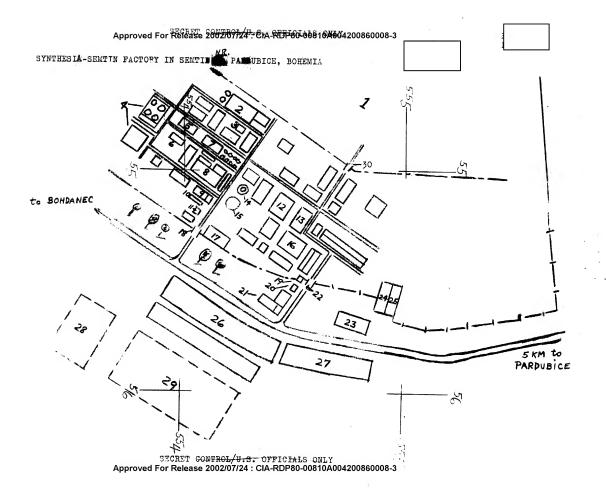
 Bohemia, manufactures mainly pharmaceuticals, organic acids and organic dyes. This factory has large laboratories; the estimated area covered by the factory is 700 by 800 meters.
- Gasoline manufacturing factory in KOMORAN ST, Bohemia. This plant has been under construction since the gases of 1953. It will have 20 furnaces for producing the gases needed for the manufacture of gasoline. The raw material which will be burned in the furnaces is powdered soft coal (hnede uhli) which will be pressed into briquettes in the factory. The light gasoline and the saturated washing oil produced are to be pumped to Stalinovy Zavody in Zaluzi near Most, Bohemia. The new factory is to be supplied by power from a power plant located in Komorany near Most in Bohemia. It is estimated that the power phwer plant produces is 40,000 kw.

Bohemia. The name of the new factory is <u>LETOV</u>, and a bearsay it is to propellise the state of a present under construction. 2. The who

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The water backed up above the dam is being detoured through a tennal ten meters in diameter which is drilled through the mountain on the right side of the river. The river is thus detoured back to the river bed past the second partition. The construction is located between the two partitions. The dam is 50 meters thick at the base, 20 meters thick at the top, 80 meters high and 100 meters wide. The water burbin's and generators are to be located in chambers within the dam itself; the ceiling (between the chambers and the top of the dam) is 1.5 meters thick. The construction project is in Slapy near Stechovice, Bohemia. Construction began in 1951 and is to be completed in 1954.

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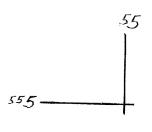
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Location of SYNTHESIA-SEMTIN factor

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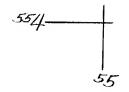
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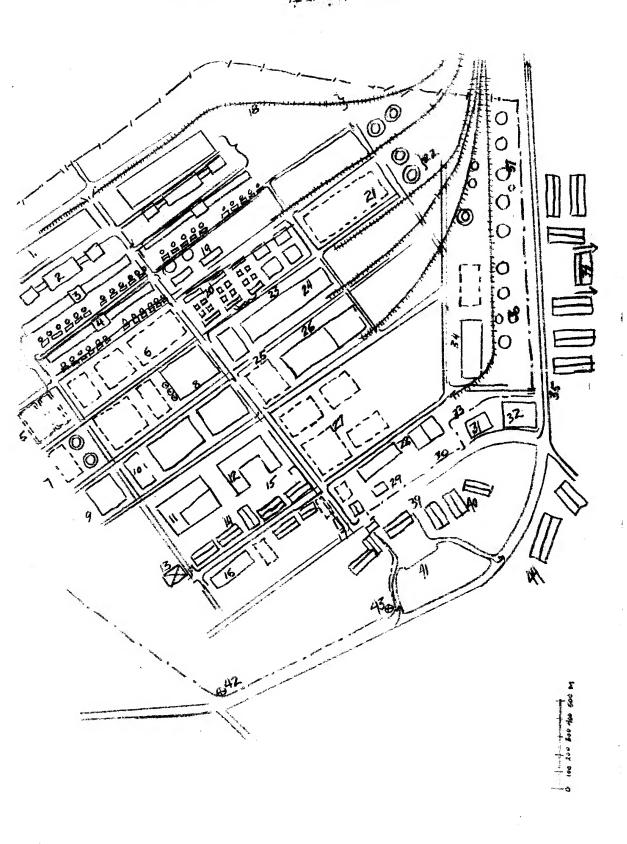
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SYNTHESIA-SEMTIN FACTORY in SEMTIMAP PARDUBICE, BOHEMIA

(Key to chart on page 7)

- 1. Area of factory, manufacturing explosives. No other details known to SOHREET.
- 2. Coal operated power plant delivering 20,000 kilowatts.
- 3. Electrical power distribution building.
- 4. Furnaces for making synthetic gases and preparation of gases.
- 5. Manufacture of fertilizer known as "ledek".
- 66. Storage tanks for NH3.
- 7. Manufacture of HNO3.
 8. Manufacture of NH3. This being expanded to increase production from 18,000 liters per day to 30,000 leters per day.
- 9. Manufacture of oxygen.
- 10. Compressing of oxygen into bottles.
- 11. Filling of containers with ammonia (NH3).
- 12. Manufacture of sulfuric acid.
- 13. Manufacture of sulfuric acid.
- 14. Cooling towers for ammonia.
- 15. Gas tank.
- 16. Manufacture of sulfuric acid.
- 17. Engineering department.
- 18. Side gate.
- 19. Main gate booth.
- 20. Guard house.
- 21. Administration building.
- 22. Main gate.
- 23. Administration building.
- 24. Dining hall.
- 25. Factory kitchen.
- 26. Factory housing.
- 27. Factory housing.
- 28. Site for new buildings, which will serve to increase the production of nitric acid of Synthesia-Semtin to 40,000 liters per day; this is to be used at the explosives manufacturing factory bordering it to the north (Point #1). Buildings are at present under construction. This known as Project "D" (also known as Problem 42000).
- 29. Site for new buildings, which will serve as new power plant; a estimated output to be 40,000 kilowatts. Now under construction.
- 30. Entry gate into the factory producing explosives.

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STALIN WORKS in ZALUZ (Key to chart on Tage 8)

- 1. Storage of coal
- 2. Preparation of coal
- 3. 24 furnaces in operation
- 4. 24 furnaces demolished by bombing
- 5. Gas plant and cleaning of gases
- 6. Preparation of coal
- 7. Manufacture of O2 (oxygen) and 2 gas storage tanks (towers)
- 8. Electrical power plant
- 9. Mechanical shops
- 10. Storage of materials
- 11. Laboratories
- 12. Construction department and laboratories
- 13. Telephone exchange building (concrete)
- 14. Construction department
- 15. Administration buildings
- 16. Small shops
- 17. Air raid shelter
- 18. Section under reconstruction since 1951
- 19. Storage tanks for by-products
- 20. TThis part damaged. Distillation of bathing oils.
- 21. Manufacture of products needed for manufacture of gasoline.
- 22. Gas tanks (for heating)
- 23. Distillation of bathing oils
- for manufacture of gasoline. 24. High pressure separation of 25. Cleaning of oil.

in operation.

- 26. Production building for manufacture of NH3 by high pressure.
- 27. Damaged building. Purpose not known. 28. Manufacture of oil.
- 29. Damaged airrraid shelter.
- 30. Cooling towers.
- 31. Hospital.
- 32. Cafeteria
- 33. Water station
- 34. Filling of bottles with O2 (oxygen)
- 35. Side entrance
- 36. Storage tanks for oil
- 37. Storage tanks for gasoline
- 38. Wooden housing buildings
- 39. Main gate
- 40. Administration buildings (wooden)
- 41. Trolley bus stop
- 42. Guard tower

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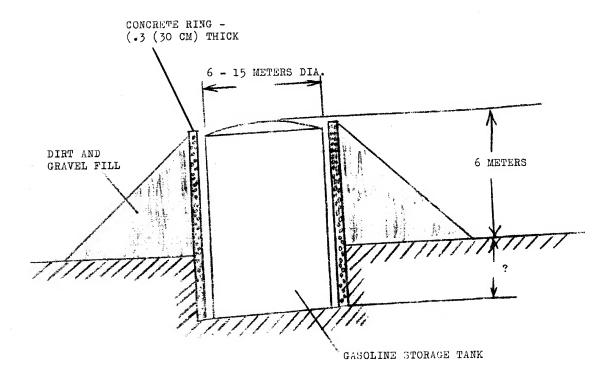
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Gasoline Storage Tanks at STALINOVY ZAVODY

in ZAL HOST, BOHEMIA

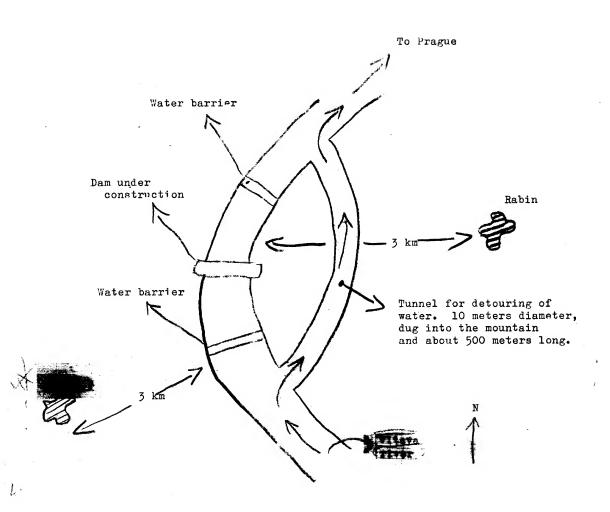


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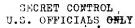
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POWER DAM UNDER CONSTRUCTION AT SLAPY, BOHEMIA



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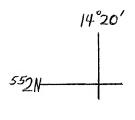


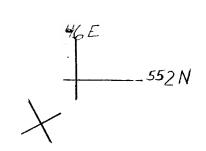
Location of power da at present under construction

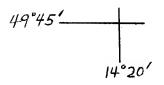
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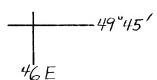
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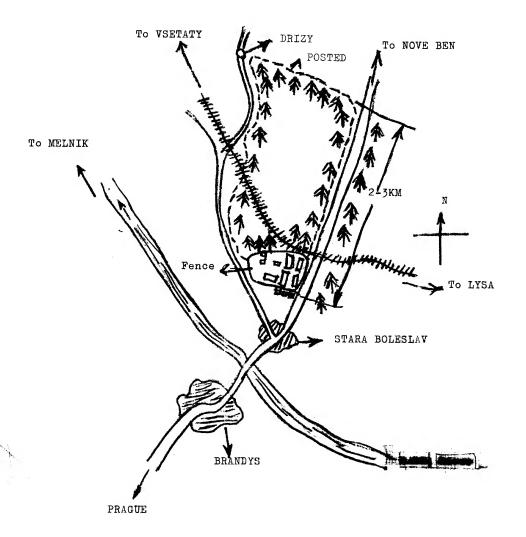
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Experimental Factory LETOV in STARA BOLESLAV, BOHEMIA



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Location of experimental factory LETO

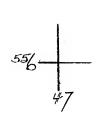
BOLESLAV, BOHEMIA

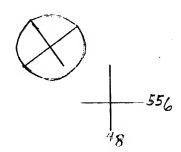
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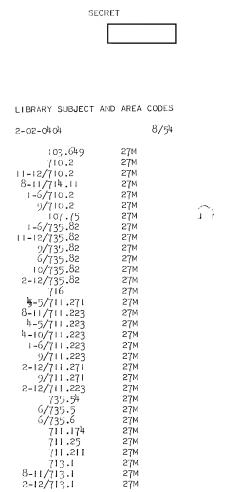






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